

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application.

Claim 1 (Currently Amended): An etching method for etching an etching target film formed on an SiO₂ film placed inside an airtight processing chamber, the method comprising:

introducing a processing gas into said airtight processing chamber, wherein said processing gas contains N₂ and at least one of C₄F₈ and CF₄; and

generating a plasma in said airtight processing chamber for etching said etching target film, wherein said etching target film is an organic film containing Si formed on said SiO₂ film, wherein a resist is used as a mask on said etching target film, and wherein said etching target film is etched until said SiO₂ is exposed ~~as an etch stopper~~.

Claim 2 (Original): An etching method according to claim 1, wherein: said organic film containing Si is constituted of SiO₂ containing C and H.

Claim 3 (Original): An etching method according to claim 1, wherein: the dielectric constant of said organic film containing Si is equal to or lower than 3.0.

Claim 4 (Original): An etching method according to claim 1, wherein: said organic film containing Si is an organic polysiloxane film.

Claim 5 (Original): An etching method according to claim 1, wherein: said processing gas further contains Ar.

Claims 6-12 (Canceled).

Claim 13 (Canceled).

Claim 14 (Currently Amended): An etching method for etching an etching target film formed on an SiO₂ film placed inside an airtight processing chamber, the method comprising:

introducing a processing gas into said airtight processing chamber, wherein said processing gas contains at least CF₄ and N₂, wherein the flow rate ratio of CF₄ and N₂ in said processing gas is essentially set within a range of $1 \leq (\text{N}_2 \text{ flow rate} / \text{CF}_4 \text{ flow rate}) \leq 4$; and

generating a plasma in said airtight processing chamber for etching said etching target film, wherein said etching target film is an organic film containing Si formed on said SiO₂ film, wherein a resist is used as a mask on said etching target film, and wherein said etching target film is etched until said SiO₂ film is exposed as an etch stopper.

Claims 15 and 16 (Canceled).

Claim 17 (Currently Amended) An etching method for etching an etching target film formed on an SiO₂ film placed inside an airtight processing chamber, the method comprising:

introducing a processing gas into said airtight processing chamber, wherein said processing gas contains N_2 and at least one of C_4F_8 and CF_4 ; and

generating a plasma in said airtight processing chamber for etching said etching target film, wherein said plasma forms contact holes at said etching target film, and wherein said etching target film is an organic polysiloxane film containing Si formed on said SiO_2 film, wherein a temperature of a bottom portion of at least one of the contact holes is maintained at about $-20^\circ C$, a temperature of an opening portion of at least one of the contact holes is maintained at about $30^\circ C$, and a temperature of a sidewall portion of at least one of the contact holes is maintained at about $50^\circ C$.